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Zonal security applied to modern diplomatic facilities, as exemplified by the construction of embassy buildings in Europe at the turn of the 20th and 21st centuries

Abstract

Diplomatic facilities are buildings with a unique structure and of great international importance. One of the important factors in their design is security and therefore the use of possible security measures (active and passive) to prevent potential threats. The aim of this article is to present the security measures used for the architecture of diplomatic facilities using the example of embassy buildings in Europe. Twenty-two embassies located in Warsaw, Berlin and Rome were analysed from this perspective. The article characterises the elements used in their design, implementation and modernisation at the turn of the 20th and 21st centuries.

Keywords:

embassy
architecture,
security,
diplomatic
facilities,
security features

The construction of diplomatic facilities compared to other public facilities is relatively rare and the building or upgrading is undertaken for specific reasons by the sending states. Due to their location - mostly in national capitals - there are other diplomatic buildings or mixed-use facilities in their immediate surroundings, i.e. government buildings, public buildings, service buildings and residential developments. Diplomatic missions form zones of their own in the urban environment and, like other buildings, are part of the urban environment for many years. It is therefore extremely important to design them accordingly. Designers of diplomatic facilities must take into account, among other things, legal, economic, utilitarian, technical, spatial and security considerations.

The research objective of this article is to collect, describe, organise and systematise information on the architecture of embassy buildings constructed or modernised in Europe at the turn of the 20th and 21st centuries in relation to contemporary security measures and architectural solutions used in this area.

When considering the issue of embassy architecture, in addition to the analysis of architectural and construction projects, literature on international law and the field of diplomacy in the broadest sense is also important, including publications on diplomatic law, consular law, foreign policy, and the origins of international relations, which often omit architectural aspects. The literature on the subject includes mainly foreign publications on security in urban public spaces published by governmental organisations (mainly British and American) and executive bodies of the European Union. Of the Polish publications, the most important include the works of, among others, architect Artur Jasiński, on security and anti-terrorist protection of building space and facilities, in which the author introduces the contemporary principles of forming urban and architectural requirements for properties. He describes legal regulations on construction, security of buildings and open spaces. In his analyses, he takes into account British and American standards, and also refers to the anti-terrorist security features of the architecture of contemporary American embassies.

Recent European studies on the design of safe public spaces include publications by the European Commission (EC), including the Communication of 9 December 2020 *A counter-terrorism agenda for*

the EU: anticipate, prevent, protect, respond¹ and the late 2022 study entitled *Security by Design: Protection of public spaces from terrorist attacks: Protection of public spaces from terrorist attacks*².

It is worth noting that in architecture, embassies were treated primarily as representative buildings. Only in the last 30 years has there been a noticeable increase in interest in their architectural solutions³. This is confirmed, among other things, by the increasing number of publications on the subject, although in Poland these are still mainly a small number of articles on specific projects published, for example, in monthly trade magazines⁴.

¹ *Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions. A Counter-Terrorism Agenda for the EU: Anticipate, Prevent, Protect, Respond*, <https://eur-lex.europa.eu/legal-content/PL/TXT/PDF/?uri=CELEX:52020DC0795&from=PL> [accessed: 5 VII 2023].

² European Commission, *Security by Design: Protection of public spaces from terrorist attacks*, <https://www.urbanagenda.urban-initiative.eu/news/security-design-protection-public-spaces-terrorist-attacks> [accessed: 20 IV 2023]. (Translations in the text are from the author - editor's note).

³ The increase in interest is linked to the collapse of the communist era in the central and eastern European states and the fall of the Berlin Wall in 1989, when multifaceted international cooperation took place. Shortly afterwards, the European Union came into being and the sending countries decided to present their premises (mainly in Germany) anew.

⁴ These include, among others.: A. Jasiński, *Wpływ zabezpieczeń antyterrorystycznych na architekturę współczesnych ambasad amerykańskich* (Eng. The impact of anti-terrorism protection on the contemporary architecture of American embassies), "Internal Security Review" 2015, no. 12, pp. 97–114; T. Fretton, G. Stiasny, *Ambasada Wielkiej Brytanii w Warszawie* (Eng. British Embassy in Warsaw), "Architektura. Murator" 2009, no. 12, pp. 56–63; B. Gadowska, *Ambasada Izraela w Berlinie* (Eng. Embassy of Israel in Berlin), "Architektura. Murator" 2002, no. 2, pp. 16–19; W. Gorczyński, *Ambasada Kanady w Warszawie* (Eng. Canadian Embassy in Warsaw), "Architektura. Murator" 2002, no. 2, pp. 9–15; H. Jootsen, A. Stępniewska, *Ambasada Niemiec w Warszawie* (Eng. German Embassy in Warsaw), "Architektura. Murator" 2009, no. 12, pp. 48–55; M. Leśniakowska, *Architektura polskich ambasad* (Eng. Architecture of Polish embassies), "Architektura. Murator" 2004, no. 2, pp. 60–62; K. Majewski, M. Sroka-Strzeszyńska, *Ambasada Korei Południowej* (Eng. Embassy of South Korea), "Architektura. Murator" 2004, no. 2, pp. 38–41; J.P. Pagarde, G. Stiasny, *Ambasada Francji w Warszawie* (Eng. French Embassy in Warsaw), "Architektura. Murator" 2005, no. 2, p. 30; A. Sitko, S. Szafarczyk, *Technologie architektury – Ambasada Królestwa Niderlandów w Warszawie* (Eng. Architectural technologies - Embassy of the Kingdom of the Netherlands in Warsaw), "Architektura. Murator" 2004, no. 2, pp. 90–97; E. van Egeraat, G. Stiasny, *Ambasada Królestwa Niderlandów* (Eng. Embassy of the Kingdom of the Netherlands), "Architektura. Murator" 2004, no. 2, pp. 25–37; G. Stiasny, *Konkursy na nowe budynki ambasad w Warszawie* (Eng. Competitions for new embassy buildings in Warsaw), "Architektura. Murator" 2004, no. 2, pp. 44–59.

Potential threats to embassies

Terrorist activities observed in the last 20-plus years are contributing to changes in the urban and architectural structures of cities. The most at risk are national capitals and metropolises⁵. As a result of terrorist activity, restrictions on the minimization and prevention of attacks are tightening. In the 21st century, terrorism has taken on a new dimension. Thanks to the development of technology, communication, social media, information can be transmitted at an increasingly rapid pace. This makes it possible to rapidly recruit potential attackers, who also target civilians and public places⁶ in order to achieve an attack with as many injuries and deaths as possible⁷. As already mentioned, embassies are mostly located in the centres of capital cities, near government buildings and other important public facilities, in areas crowded during the day. Thus, they can become direct or indirect targets of terrorist attacks. It is therefore important to adequately address potential threatening activities - as early as the design and construction stage - in order to fully secure the facilities or minimise the consequences of a potential terrorist attack.

It is worth emphasising that the design of foreign missions is by no means unified. The selection of conceptual, construction or implementation designs for embassy buildings depends on the internal legal regulations of both the sending and the receiving states, taking into account the legal norms of the embassy's home country in the first instance. The number of upgrades, purchases of facilities or designs for new buildings is determined by the budget allocated for these purposes. Many premises and facilities are rented. In 2004, the head of the Investment and Renovation Unit of the Polish Ministry of Foreign Affairs stated that the purchase of a new facility is profitable when the ratio of rental costs to purchase costs pays off within ten years⁸.

⁵ A. Jasiński, *Architektura w czasach terroryzmu. Miasto-przestrzeń publiczna-budynek* (Eng. Architecture in times of terrorism. City-public space-building), Warszawa 2013, p. 9.

⁶ Examples of the terrorist attacks described are the attacks carried out on, among others, the World Trade Center twin towers in New York using hijacked passenger planes (11 IX 2001) and the London underground and bus bombing (July 2005).

⁷ Contemporary terrorism is understood to be the activity of extremist groups which, through attacks, assassinations, kidnappings, etc., seek to draw the attention of the public to the ideas they promote or try to force governments of individual countries to make certain concessions or benefits. From: *Encyklopedia*, vol. 9, Warszawa 2001, p. 141.

⁸ K. Rzechowski, *Polskie placówki dyplomatyczne* (Eng. Polish diplomatic missions), "Architektura. Murator" 2004, no. 2, pp. 63–70.

Terrorist attacks, which are the greatest threat to the security of diplomatic missions, can consist of individual actions (using firearms, explosives) or mass attacks (using explosives, chemical, biological, and radiological (CBR) weapons)⁹. The greatest risk, however, comes from an attack carried out using a vehicle-borne improvised explosive device. The impact of an explosion is often catastrophic, and it is therefore advisable to locate parking areas for potential threat vehicles as far away from buildings as possible, in order to reduce the risk of damage¹⁰. Consideration shall be given to the possible speed and weight of vehicles¹¹.

The 1980s saw a number of terrorist attacks on US diplomatic missions in the Middle East. In April 1983, a raid on the US embassy in Beirut and the explosion of a car filled with explosives driven by an Islamic suicide bomber killed 63 people and injured 120 others. A year later, there was another explosion at the embassy, which killed 24 people and injured 21. On 23 October 1983, 241 soldiers were killed in an attack on the US Marines barracks at the airport. On 12 December 1983, attacks were carried out on the embassies of the United States and the French Republic in Kuwait¹². In August 1998 American embassies in Kenya and Tanzania were attacked (Image 1). These events demonstrated the enormity of the inadequacies in their protection and defence system. Since then, the US government has been working to improve the guidelines and standards for protecting and shaping its foreign diplomatic missions¹³.

⁹ Attacks using explosives (bombs) are also the most common threat. Among these we can distinguish: explosion of a parked car loaded with explosives near or on the premises of an establishment, ramming of the entrance or entrance or facade of an embassy with a car loaded with explosives, placing an explosive charge in a consignment or goods to be delivered, planting or placing a charge on the premises of a building, attack by a suicide bomber. See: *Reference Manual to Mitigate Potential Terrorist Attacks Against Buildings*, series: Buildings and Infrastructure Protection Series, <http://www.dhs.gov/xlibrary/assets/st/st-bips-06.pdf>, p. 1/15 [accessed: 16 V 2016].

¹⁰ *Embassy Perimeter Improvement Concepts & Design Guidelines*, Department of State Bureau of Overseas Buildings Operations, June 2011, <https://www.scribd.com/document/261408078/Embassy-Perimeter-Improvement-Concepts-Design-Guidelines>, p. 56; *Site and Urban Design for Security. Guidance Against Potential Terrorist Attacks*, series: Risk Management Series, <https://www.fema.gov/sites/default/files/2020-08/fema430.pdf> [accessed: 13 V 2023].

¹¹ *Embassy Perimeter Improvement Concepts...*, pp. 56–72.

¹² *Site and Urban Design for Security...*, pp. 1/29–1/31.

¹³ See in more detail: A. Jasiński, *Wpływ zabezpieczeń...*, pp. 97–114.



Image 1. The state of the US embassy buildings after the terrorist attacks in August 1998 - in Nairobi in Kenya (A), in Dar es Salaam in Tanzania (B).

Source: *Site and Urban Design for Security. Guidance Against Potential Terrorist Attacks*, series: Risk Management Series, US Federal Emergency Management Agency (FEMA 430), December 2007, <https://www.fema.gov/sites/default/files/2020-08/fema430.pdf>, p. 1/29, 1/31 [accessed: 13 V 2023].

Embassy buildings can also be damaged as a result of a terrorist attack carried out in the vicinity of the facility. This happened, for example, in Athens in November 2015, when the embassy of the Republic of Cyprus was severely damaged by a bomb explosion (Image 2). The most likely target of the terrorists was the Federation of Greek Industries building located opposite the embassy. However, the force of the explosion and blast was so great that the entrance area of the building, the front façade and the glazing of the outer wall from the ground floor to the sixth floor were damaged. The structure of the embassy buildings suffered significantly, although this was not the intention of the bombers.



Image 2. Embassy of the Republic of Cyprus in Athens: entrance area, state before the explosion (A), state after the bomb explosion (B).

Source: image 2A - property of the author; 2B – A. Kades, *Cypriot embassy severely damaged in Athens bomb blast*, CyprusMail, 24 XI 2015, <http://cyprus-mail.com/2015/11/24/cypriot-embassns-bomb-attack/> [accessed: 24 XI 2015].

It is noteworthy that anti-terrorist policies, with strict conditions concerning, among other things, their own foreign establishments, have been most thoroughly developed in the United States and the United Kingdom. Individual legal regulations covering the issue of terrorism contain important guidelines for the design of the architecture of embassies and the spaces belonging to them. In the light of large-scale research into the security of buildings, diplomatic facilities and public spaces against terrorist threats, both approaches - the appropriate use of security features and the formation of facilities - are relevant already in the design process.

Ways of securing diplomatic facilities

When analysing issues concerning the security of embassy buildings, the most important and binding piece of legislation is the Vienna Convention on Diplomatic Relations, under which embassies, their grounds and staff are protected. It specifies that the premises of missions are guaranteed inviolability¹⁴. Similarly, the residence of the ambassador, whether inside or outside the embassy building, is protected by the host state¹⁵. The host state, on the other hand, is obliged, inter alia, to take all appropriate steps to protect the embassy from unwanted intrusion or harm, to protect it from disturbance to the mission and from impairing its dignity. Crucially, the host state is responsible for the safety, security and respect of the foreign post even in the event of armed conflict, the severance of diplomatic relations or the cancellation of the mission. The inviolability of embassies also applies in the event of public gatherings, demonstrations, etc.¹⁶ Host states are also obliged to prevent attempts to carry out attacks on embassies. Despite all the regulations and obligations imposed on the host state, it is possible to observe the occurrence of situations that breach the security of embassies and their staff.

¹⁴ *Vienna Convention on Diplomatic Relations, drawn up in Vienna on April 18, 1961*, Articles 22, 29 and 30.

¹⁵ *Ibid*, Article 30. The private residence of a diplomatic representative enjoys the same inviolability and protection as the premises of the mission.

¹⁶ In the case of the organisation of assemblies in the vicinity of diplomatic representations, the municipality must immediately notify the Minister of Foreign Affairs of the place, date and potential number of participants. See: *Act of 24 July 2015 - Law on assemblies*.

As mentioned, the most important Polish study on shaping architecture and urban space in terms of terrorism was published by architect Artur Jasiński. He identifies two possibilities for ensuring an adequate level of security in the event of a terrorist attack carried out with explosives. The first solution is zonal security, i.e. a sufficiently large safety zone, equipped with intermediate obstacles, whereby the building can be kept at an appropriate distance from the site of a possible explosion so that it is not damaged. The second way is to reinforce its structure and elements. Jasiński stresses that the first option is more effective, economical and quicker to implement, as not all existing buildings can be technically altered¹⁷.

In his publications, Jasiński describes and characterises documents, legal acts and academic publications - mainly produced in the United States and the United Kingdom - dedicated to the issue of terrorism and the adequate protection of public spaces and mixed-use buildings¹⁸. At the same time, he points out that there is a lack of studies on the subject in the Polish literature and mentions only his own research and publications.

The preferred zonal defences consist of deploying protective barriers around the protected object and using measures between the boundaries of the plot and the building that can significantly reduce the effectiveness of the attack¹⁹. Elements such as fences, gated entrances, technical entrances, entrances, car parks, access and security controls (video surveillance, turnstiles, sensory gates, metal detection gates, X-ray scanners for baggage and parcel control) are important. Zonal security elements include, but are not limited to, the form of the terrain, its irregularities, the watercourses present and man-made elements, e.g. barriers in the form of walls, fences, retaining walls, as well as landscaping elements²⁰. The literature on the subject distinguishes between two groups of zoning protection for facilities: passive and active²¹.

¹⁷ A. Jasiński, *Architektura w czasach terroryzmu...*, p. 177.

¹⁸ See in more detail: *ibid.*, pp. 13–30.

¹⁹ *Reference Manual to Mitigate...*, p. 2/2.

²⁰ A. Jasiński, *Architektura w czasach terroryzmu...*, p. 177.

²¹ Protective measures for public spaces and areas around the building have been recommended and described, among other things, in: *Reference Manual to Mitigate...*, pp. 2/18–2/77; *Primer for Design of Commercial Buildings to Mitigate Terrorist Attacks*, series: Risk Management Series, <https://www.fema.gov/sites/default/files/2020-08/fema427.pdf>, pp. 6/1–6/7 [accessed: 30 V 2023]; A. Jasiński, *Architektura w czasach terroryzmu...*, pp. 177–198.

Passive ways to zonal security of diplomatic facilities

Passive elements to protect embassies include²²:

- **reinforced steel or reinforced concrete urban furniture**, e.g. benches, seats, posts, flowerbeds, flower pots, bicycle racks, lamp posts, information boards, bus shelters, shelters - adapted to the site so that the distance between them is no more than 1.2 m;
- **retaining walls or freestanding walls** (point or perimeter) intended to protect against ramming and unwanted entry onto a plot of land, e.g. by complementing and reinforcing naturally occurring landforms, structures or fences. When located in a publicly accessible area (i.e. square, pavement, etc.), these can be walls fitted with seating or planting, or clad with special finish cladding. In addition, integrated perimeter systems with vegetation elements, rest areas and information points can be introduced, incorporating breaks for pedestrian walkways (recommended width is 1 m). Solutions in the form of reinforced, prefabricated, concrete road barriers (jersey barriers), which can be moved efficiently and can effectively separate specific zones, are also used.
- **static, free-standing columns** that prevent unauthorised entry and parking of cars and delimit traffic exclusion zones (Image 2). They can occur singly or in groups and take different forms, such as simple - with a purely protective function, architectural-decorative (e.g. integrated with lighting), visible or concealed (integrated with other elements such as flowerbeds, benches or flower pots) - (Image 3);



Image 3. Static posts as part of zonal protection in front of the Embassy of the Kingdom of the Netherlands in Berlin (A), freestanding protection posts and pots as part of passive zonal protection in front of the Israeli Embassy in Athens (B).

Source: property of the author.

²² Developed based on U.S. standards for embassy design and recommendations from the U.S. Federal Emergency Management Agency. See also: D. Cormie, G. Mays, P. Smith, *Blast effects on buildings*, London 2009, pp. 250–273; *Embassy Perimeter Improvement Concepts...*, pp. 56–72; *Site and Urban Design for Security...*

- **sculptures** (*NoGo barriers*) originally designed for the Wall Street area in New York²³, which are an evolved form of static free-standing posts (Image 4). *NoGo barriers* are designed and constructed to be aesthetically pleasing, visually appealing and can - in addition to their primary protective function - be used as seats or tables. Protection elements can also be sculptures or art installations;



A



B

Image 4. *NoGo barriers* - security elements within the Wall Street zone. bronze sculptural forms integrated with lighting (A), seats integrated with pneumatically lowered crossing posts (B).

Source: <http://www.rogersmarvel.com/projects/NYSE/> [accessed: 15 VI 2016].

- **natural forms of protection**, i.e. elements of nature that can act as a protective barrier while integrally complementing the composition of the surroundings (Image 5). Natural forms of protection may include, among others, boulders, massively and sufficiently deeply founded, which can be an effective zonal protection; natural or secondarily created watercourses (streams, ponds, ponds, moats, waterfalls, fountains, rivers, etc.); garden *aha* forms²⁴ (Fr. ha-ha), i.e. hidden elements preventing the encroachment of the garden area, e.g. a hidden ditch, a fault or a watercourse; a hidden planting, a rockery, a small pond, a small pond, a moat, a moat, a waterfall, a fountain, a river, etc. hidden ditch, fault or watercourse; massive plantings whose root system cannot damage other zoning

²³ Artistic forms intended to provide an adequate level of security in the Wall Street area were designed by the American design firm Roger Marvel Architects. See: <http://www.rogersmarvel.com/projects/NYSE/> [accessed: 28 V 2023].

²⁴ From: *Encyklopedia humanistyczna* (Eng. Encyclopedia of the humanities), <http://encenc.pl/aha/> [accessed: 14 V 2023].

security elements (e.g. fences), placed at a sufficient distance from the perimeter guards to ensure full view and control by a camera system and physical security system, preventing climbing and passage by unwanted persons;



Image 5. Trees, flower pots and flower beds that are part of the passive security zone in front of the Embassy of the French Republic in Warsaw (A), Embassy of Canada in Warsaw (B).

Source: property of the author.

- **fences** of different materials in terms of texture and transparency (e.g. stone, brick, solid, glass, perforated metal, mesh), made in such a way as to prevent climbing (Image 6). Vertical baffles are recommended to allow users of the urban space to see into the embassy area, giving the establishment a friendly and open character.

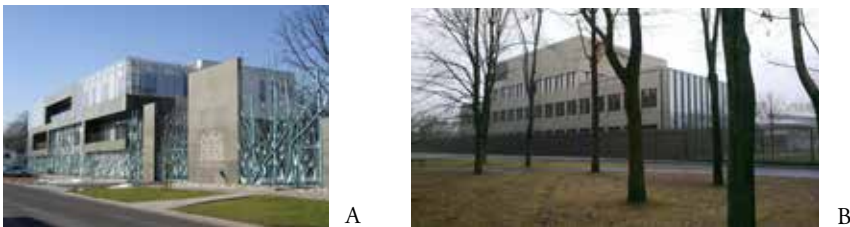


Image 6. Façade and front fence of the Embassy of the Kingdom of the Netherlands in Warsaw (A), view of the fence and façade from the north-west side of the Embassy of the United Kingdom in Warsaw (B).

Source: property of the author.

Active means of zonal security of diplomatic facilities

Active zonal security measures are mainly found at entrances, crossings, access points, technical entrances, emergency entrances and exits. Among

these, we can distinguish between two types of solutions: mechanically or manually controlled:

- **free-standing posts** placed within the crossing area, hydraulically, pneumatically, electrically or manually lowered, made of aluminium, steel, fibreglass, often supplemented with additional elements (lighting, information boards)²⁵ – (Image 7);



Image 7. Free-standing drop-down posts - in front of the entrance gate to the car park of the US Embassy in Berlin (A), within the entrance to the inner courtyard of the Embassy of the Kingdom of the Netherlands in Berlin (B).

Source: property of the author.

- **rotating crossing platforms**²⁶, which as a hybrid solution consist of two elements: a rotating panel and posts (Figure 1).

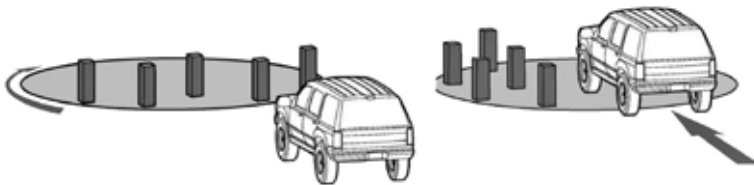


Figure 1. Rotating crossing platforms. Left - closed crossing, right - open crossing.

Source: *Site and Urban Design for Security. Guidance Against Potential Terrorist Attacks*, series: Risk Management Series, <https://www.fema.gov/sites/default/files/2020-08/fema430.pdf>, p. 4/48 [accessed: 13 V 2016].

²⁵ See in more detail: *High Security Bollards*, Delta Scientific Corporation, <http://deltascientific.com/high-security/bollards/> [accessed: 28 V 2023].

²⁶ Ch.G. Oakes, *The Bollard: Crash- and Attack-Resistant Models*, Whole Building Design Guide, 9 II 2016, <https://www.wbdg.org/resources/bollard-non-crash-and-non-attack-resistant-models> [accessed: 9 I 2023].

- **discs or crossing-road barriers**²⁷ to block the entry of unauthorised vehicles. They can be extended upon receipt of a signal from the control panel and, once the danger has passed, retracted. Depending on the form of the movable element, there are two types of road barriers, which can vary in size, height, width and strength. The first is the rising wedge barriers – (Image 8 and Figure 2).



Image 8. US Embassy in Baku - rising wedge type road barrier in front of the entrance gate to the facility.

Source: *U.S. Embassy security upgrades in Baku*, Pernix Group, <https://www.pernixgroup.com/project/baku-design-build-isat-security-upgrades/> [accessed: 10 I 2023].

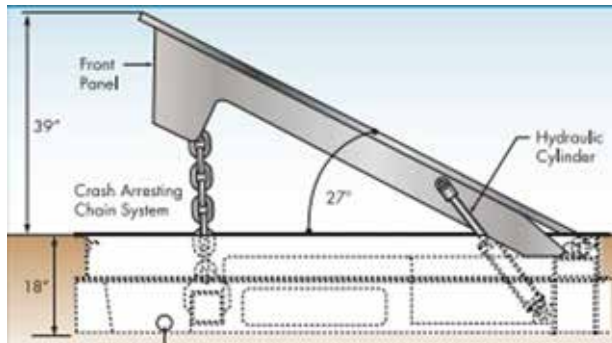


Figure 2. Cross-section of a rising wedge type road barrier.

Source: *Site and Urban Design for Security. Guidance Against Potential Terrorist Attacks*, series: Risk Management Series, <https://www.fema.gov/sites/default/files/2020-08/fema430.pdf>, p. 4/40 [accessed: 13 V 2023].

²⁷ *Reference Manual to Mitigate...*, pp. 2/57–2/61.

The second type is equipped with a rotating wedge system – (Image 9 and Figure 3).



Image 9. Road barrier with rotating panel in the entrance area in front of the entrance to the Embassy and Residence of Japan in Warsaw.

Source: <http://www.google.pl/maps/> [accessed: 10 III 2015].

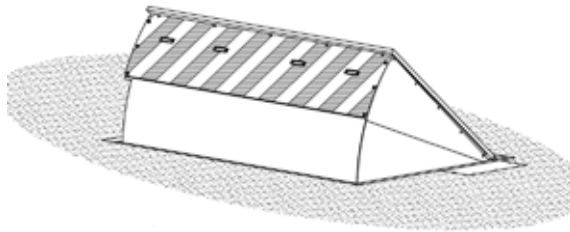


Figure 3. Road barrier.

Source: <https://deltascientific.com/wp-content/uploads/2021/01/90140-Rev-B-DSC207S-General-Arrangement.pdf> [accessed: 9 I 2023].

Portable road barriers that are lowered and raised hydraulically, either automatically or manually, are also available (Image 10)²⁸.

²⁸ The portable element protects against entry and ramming by unwanted vehicles in an area where a permanent barrier cannot be made. The advantage of such a solution is that there is no special foundation or anchoring. The blockade consists of two lateral steel components weighing no more than 318 kg, which must be filled with concrete in advance or on site. The firewall is equipped with a radio panel and a card reader. See in more detail: *DSC1100 K8 Portable Barriers*, Delta Scientific Corporation, <https://deltascientific.com/product/portable-barrier-dsc1100/> [accessed: 28 V 2023].



Image 10. British Embassy in Budapest - portable road barrier (DSC 1100 type).

Source: *DSC1100 K8 Portable Barriers*, Delta Scientific Corporation, <https://deltascientific.com/product/portable-barrier-dsc1100/> [accessed: 28 V 2023].

- **entrance gates** (sliding, swinging or hinged opening with or without ground clearance) for pedestrians and vehicles (Image 11)²⁹. To increase the level of security, entrance gates can be integrated with other elements to protect embassy facilities and spaces. In practice, they are combined with shields or road barriers or hydraulically or pneumatically lowered free-standing posts.



Image 11. Embassy of the Republic of Turkey in Berlin - openwork entrance gate in front of the garage exit, with movable security posts behind it (in the background).

Source: property of the author.

²⁹ There are manually or mechanically operated systems. Gate sizes and forms depend on the manufacturers. They offer different types of gates with spans from 3.6 m to 9.15 m. The following finishes are proposed to enhance the aesthetics of the massive frames: glass, screen-printed glass, stone, steel, concrete, wood and painting with a specific range of colours. See in more detail: *Sliding High Security Crash Rated Gates*, Delta Scientific Corporation, <https://deltascientific.com/high-security/sliding-gates/> [accessed: 28 V 2023].

- **barriers**, whether permanently or temporarily installed, e.g. as mobile installations³⁰.

Security measures applied in embassies built or upgraded in Europe at the turn of the 20th and 21st centuries

For the purpose of researching the security aspect of embassy buildings, an analysis of source materials and field and photographic research was carried out on 22 selected buildings located in Warsaw, Berlin and Rome.

In the vicinity of the development, in addition to reinforced site security and massive static road barriers, patrols and permanent observation booths can be seen, in line with the legal regulations of the Vienna Convention for ensuring an adequate level of protection and security for diplomatic and consular posts. The US Embassy in Athens is a case in point (Image 12).



Image 12. US Embassy in Athens - zonal security in the form of static road barriers, high fencing, a permanent guard booth for law enforcement and road patrol.

Source: property of the author.

The aftermath of the 11 September 2001 attack on the WTC twin towers in New York resulted in the abandonment of attempts to fully integrate embassies into the urban spaces of host capitals³¹. An example of abandoning the initial assumptions of openness is the Embassy of the French Republic in

³⁰ The control of the unit comes in two versions: manual and hydraulic. The device requires neither anchoring nor foundations, making it possible to move it quickly and efficiently. See in more detail: *P500 High Security Portable Barriers*, Delta Scientific Corporation, <http://www.deltascientific.com/high-security/portable-barriers/ip500> [accessed: 28 V 2023].

³¹ Excluding American implementations, whose relocation and shape modification was defined in the 1980s and 1990s. This is evidenced by the Inman and Cowe reports.

Berlin, located at Pariser Platz 5 (Image 13). It is a compact building situated in the frontage of the square and street, with internal courtyards and no fence. On the west side of the main façade, directly against the wall of the building adjacent to the establishment, is the Rue publique - a two-storey internal pedestrian passage, 5 m wide, glazed and paved. It is L-shaped and connects the public spaces on the Wilhelmstraße and Pariser Platz sides. Designed to be open and accessible to the public, the walkway was intended as a way of inviting passers-by inside the embassy, but as a result of increased terrorist attacks in the early years of the 21st century, the walkway was already closed to the public during the construction phase for security reasons³².



Image 13. Embassy of the French Republic in Berlin – front facade facing Pariser Platz (A), interior of Rue publique and courtyard with visible sculpture (B).

Source: image 13A - property of the author; 13B – S. Redecke, *Der Weg zum Licht – Französische Botschaft am Pariser Platz in Berlin*, “Bauwelt” 2003, no. 10, p. 14.

Inman Report, a 1985 report outlining the scope and dimension of security problems in US foreign diplomatic missions and identifying elements to ensure an adequate level of security and protection for those working in or visiting missions. The report is available on the website of the Federation of American Scientists, which provides scientific analysis and solutions to, inter alia, protect against threats to national and international security. See: *Report of the Secretary of State’s Advisory Panel on Overseas Security*, <http://www.fas.org/irp/threat/inman/> [accessed: 5 VII 2023]; J.C. Barker, *The Protection of Diplomatic Personnel*, University of Sussex 2006, pp. 9–10.

The Crowe Report on embassy security – a Government Department report produced under the leadership of Admiral William J. Crowe. The report assumed the introduction of a 10-year government programme to build diplomatic facilities, secure missions and staff at US embassies around the world. The projected annual cost of the venture was US \$1.4 trillion. See: J.C. Loeffler, *Embassy design: security vs. openness*, “Foreign Service Journal”, September 2005, pp. 44–51.

³² K. Englert, J. Tietz, *Botschaften in Berlin* (Eng. Embassies in Berlin), Berlin 2004, pp. 130–131; S. Redecke, *Der Weg zum Licht – Französische Botschaft am Pariser Platz in Berlin* (Eng. The Path to Light - French Embassy on Pariser Platz in Berlin), “Bauwelt” 2003, no. 10, pp. 12–19; P. Ulrich, *Die französische Vertretung am Pariser Platz will trotz hoher Sicherheitsanforderungen ein offenes Haus sein: Bald bietet die Botschaft Führungen durch das neue Gebäude* (Eng. The French representation on Pariser Platz wants to be an open house despite high security requirements: Soon the embassy will offer guided tours of the new building), “Berliner Zeitung”, 24 I 2003.

Some embassy developments do not include a developed security structure in their programme. An example is the free-standing Embassy of the Italian Republic in Berlin (Image 14). The building was constructed between 1938 and 1942, and the historic building was rebuilt between 1999 and 2003. The embassy is located on a trapezoidal-shaped plot of land. The three-winged building, resolved in a U-shape, is closed on the west side with a two-storey portico. The front part of the building is not separated from the public space in any way, nor are the western and eastern elevations. The only visible security feature is the CCTV.



Image 14. Front facade of the Embassy of the Italian Republic in Berlin.

Source: property of the author.

The design of buildings in terms of security should be in balance with other important aspects such as aesthetics, prestige, accessibility, functionality, technical consumption, the environmental impact of the facility or the use of renewable energy sources. The countermeasures used in design and implementation should be integrated with other elements of the establishment so that they create a friendly working environment that is positively perceived by the users of the diplomatic facilities and the residents of the capital. Appropriate landscaping of both the plots on which embassies are located and the adjacent surroundings can prevent hazards from approaching the building walls. Not all building plots and facilities can be secured within their occupied area. Available publications on building security recommend maintaining safety zones between the building and the fence or plot boundary. If an area outside or on the outskirts of a city is being considered, the requirement to maintain a distance does not usually pose difficulties. The situation is different in the case of inner city developments, where - due to the intensive built-up

area - alternatives are used, e.g. the exclusion of parts of streets or pavements used as public spaces, as exemplified by the British Embassy in Berlin (Image 15), where a section of Wilhelmstraße has been partially excluded from traffic using road barriers, thus ensuring that only authorised vehicles can access the building.



Image 15. British Embassy in Berlin - exclusion by means of zone barriers of a section of Wilhelmstraße. View from Behrenstraße.

Source: property of the author.

The Table shows the results of the zonal security analysis of the 22 embassies located in Warsaw, Berlin and Rome. Passive property zoning security in the form of building access control, internal and external monitoring is present in all of the surveyed facilities. In the case of 68% of the establishments, there are additional guards with a security post within the fence or directly at the entrance area of the building. Half of the surveyed permanent diplomatic missions use elements of permanent road barriers in the form of bollards or posts in their landscaping or areas adjacent to their plots. More than three-quarters of the embassies surveyed (77%) are completely or partially isolated from neighbouring spaces and plots by means of fencing.

Active safety elements of zonal road barriers to block the entry of unauthorised vehicles (discs) were used in only 9% of the cases. Movable barriers in the form of posts or bollards were used in 27% of facilities, massive reinforced entrance gates were used in 54%, and double road barriers occurred in three developments (14%). In 27% of the establishments, both the entrance areas within the fence and the embassy gates were doubled. This created locks to ensure control of entrances and entrances, as if

unwanted persons or vehicles cross the first zone with security elements, the services have the ability to block this section and prevent further access.

Table. Characteristics of security in embassies - zonal security: passive and active.

No.	Embassy	City	Security of the embassy building/complex										
			Passive zone protection components						Active zone protection components				
			Access control	Guard box(es) with a security post	External CCTV	Internal CCTV	Road barriers (fixed posts)	Fence	Hydraulic road barriers (discs)	Hydraulic road barriers (posts)	Double road barriers	Solid, reinforced entrance gates	Double entry and exit zones (locks)
1.	French Republic	Warszawa	•	•	•	•	•	•	-	-	-	•	-
2.		Berlin	•	-	•	•	-	-	-	-	-	-	-
3.	Kingdom of the Netherlands	Warszawa	•	•	•	•	-	•	-	-	-	-	-
4.		Berlin	•	•	•	•	•	-	-	•	-	-	-
5.		Rzym	•	•	•	•	-	•	-	-	-	•	-
6.	United Kingdom	Warszawa Polska	•	•	•	•	•	•	-	•	-	•	•
7.		Berlin	•	•	•	•	•	-	-	•	•	•	•
8.	Scandinavian countries	Berlin	•	-	•	•	•	•	-	-	-	-	-
9.	Japan	Warszawa	•	•	•	•	-	•	•	-	-	•	•
10.		Berlin	•	•	•	•	-	•	•	-	-	•	•
11.	South Korea	Warszawa	•	•	•	•	-	•	-	-	-	•	-
12.	United States	Berlin	•	-	•	•	•	•*	-	•	•	-	•
13.	Swiss Confederation	Berlin	•	•	•	•	-	•	-	-	-	-	-
14.	Canada	Warszawa Polska	•	•	•	•	•	•	-	-	-	•	-
15.		Berlin	•	-	•	•	•	-	-	•	-	-	-
16.	Federal Republic of Germany	Warszawa	•	•	•	•	•	•	-	-	-	•	•

17.	Kingdom of Spain	Warszawa	.	.	.	.	.	.	.	-	-	-	.	-
18.	United Mexican States	Berlin	.	-	.	.	-	.*	-	-	-	-	-	-
19.	Republic of India	Berlin	.	.	.	.	-	.	-	-	-	-	.	-
20.	Republic of Turkiye	Berlin	.	.	.	.	.	.	-	.	.	.	.	-
21.	South Africa	Berlin	.	-	.	.	-	.	-	-	-	-	-	-
22.	Kingdom of Belgium	Berlin	.	-	.	.	-	-	-	-	-	-	-	-
Percentage ratio:			100%	68%	100%	100%	50%	77%	9%	27%	14%	54%	27%	
Legend : • element is present, .* element is fragmented, - no element														

Source: own elaboration.

Given the increased likelihood of an attack on embassies, the need for security at the facility cannot be overlooked either. Individuals may bring a dangerous element directly into the facility. In order to be able to respond quickly to potential danger, backpacks, bags or electronic devices, i.e. computers, cameras or mobile phones, are prohibited in a large group of establishments. These must be deposited at the control point and are returned to the guest after the visit.

The security of permanent diplomatic missions is extremely important and often complex. The process of putting in place security must run in parallel with the design stages that follow. The use of available methods allows for a coherent implementation of the investment and the development of the adjacent surroundings. Manufacturers of containment barriers are able to tailor catalogue solutions to specific individual requests. The use of belaying elements in the form of reinforced landscaping and appropriately shaped landscaping not only improves the aesthetics, but also provides a hindrance to potential attackers.

Summary

Contemporary studies on security by design and the protection of public spaces emphasise the need to apply security concepts from the initial stages of designing or modernising urban spaces, taking into account, for example, the reorganisation of urban planning and communication

solutions in the vicinity of areas or facilities exposed to potential terrorist attacks. The focus should also be on integrated design, in line with sustainability and the New European Bauhaus, i.e. design with an emphasis on safety, inclusiveness, quality and ease of life, accessibility for users and the introduction of attractive and functional solutions³³. It is also important to remember to use elements that can make a positive contribution to minimising climate change. These conditions should be met in each of the six categories of public spaces classified by the EC. Diplomatic missions belong to governmental spaces³⁴.

The four key aspects of the concept of designing safe public spaces include: multifunctionality, proportionality, aesthetics and cooperation with parties who may influence or be affected by the proposed solutions. The European Commission emphasises the need for the necessary protection measures, with the concept of “invisible security” stating that forms of protection should be small-scale architectural and urban engineering elements that are integrated into the surroundings and do not give the impression of fortification³⁵. Consideration of the above aspects and the involvement of an interdisciplinary design team comprising qualified professionals and stakeholders involved in the design process, will allow the implementation of timely, effective and aesthetically pleasing implementation solutions.

A wide range of measures are used to ensure that embassies have adequate security. Within the building, state-of-the-art technology, integrated monitoring and intruder alarm systems, access control devices, motion sensors, protective film for glass, reinforcement of the building’s structure, ventilation security (securing all building inlets and outlets, i.e. exhausts and intakes, to avoid the placement of threatening elements), as well as physical active and passive zonal protection elements and satellite views are used. All of these measures are designed to protect against and

³³ See in more detail: https://new-european-bauhaus.europa.eu/index_en [accessed: 5 VII 2023].

³⁴ According to the classification used by the EC, the following categories of public space are distinguished: recreational, commercial, public, religious, communication, governmental. See: *Security by Design: Protection...*, pp. 19–29, 38–39.

³⁵ A. Jasiński, *Koncepcja „niewidzialnego bezpieczeństwa” stosowana w zabezpieczeniu antyterrorystycznym amerykańskich miast metropolitalnych* (Eng. The concept of “invisible safety” used in the counter-terrorist security measures in the US metropolitan cities), “Internal Security Review” 2011, no. 5, pp. 99–115.

prevent potential terrorist attacks³⁶. However, the ever-increasing ingenuity of criminal groups and the current intensification of assaults using various types of objects, machines or devices are causing the field of security to constantly evolve.

Security at the lot and embassy is provided primarily by a fence, separating the facility space from neighbouring areas, and checkpoints, where petitioners and visitors are carded and their belongings and vehicles are checked (x-rayed). Depending on the needs of investors, checkpoints may be located within the perimeter fence line, within the building or both. Checkpoints within the fence can be common to several locations (e.g. separate checkpoints for the consular area, the residence and the chancellery) or individual for each of them. The first solution is related to the need to save money and thus reduce the number of guard buildings and security personnel. In contemporary embassy developments or modernisations, there are cases where neither fencing nor an external access control point is part of the solution. Security controls are supplemented by both plot monitoring and landscaping elements such as plantings and other landscape elements (watercourses, boulders, hills). In the vicinity of European developments, in addition to reinforced site protection and massive, static road barriers, patrols and permanent observation booths can be observed, in accordance with the legal regulations of the Vienna Convention for ensuring an adequate level of protection and security for diplomatic and consular posts. In major developments, the location of car parks or garages within buildings is increasingly being abandoned, as they are easy places to detonate an explosive charge. It is advisable to locate parking areas outside the perimeter of the building and, if this is not possible, they should be reserved for a specific group of vehicles (employees and privileged persons).

When discussing security measures, the need to ensure security within the premises of the facility, where individuals may bring a dangerous item directly into the facility (weapons, cargo), cannot be overlooked. Access control points are most often located in front of the entrance areas. Within them, persons, vehicles and consignments are monitored, controlled, checked and legitimised before entering or entering the facility. Surveillance and access rules are primarily governed by intra-state procedures and modern security requirements. Typically, mechanical

³⁶ *Reference Manual to Mitigate...*, pp. viii-ix.

and electronic access control systems are used, i.e. video surveillance - cameras (CCTV system), entry turnstiles, low turnstiles (tripods) or sensor gates, metal detecting gates, passageways with locks requiring numeric (PIN) codes or access cards (proximity, chip, magnetic) and x-ray scanners for baggage and parcel inspection.

The diversity of uses of properties adjacent to diplomatic buildings in Europe has allowed the integration of areas with different functions and, in some cases, increased interest in them from both the local community and tourists. Therefore, the applied reinforcement of the spatial forms of buildings and areas adjacent to embassies should not significantly affect the aesthetics of the facilities. The use of landscaping elements and appropriately shaped relief not only improves the appearance, but also provides additional difficulty for potential attackers. It should be recalled, of course, that the security measures applied both on the grounds and in embassy buildings can vary considerably depending on the sending country, the mutual relations with the host country and their internal regulations, the financial resources of the investor and the location of the facility. Nowadays, there are embassy developments located within a section, floors or storey of a building with a different purpose, which makes it much more difficult to put in place the safeguards outlined and ensure an adequate level of security.

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